

4th International Conference on Smart Energy
Systems and Technologies (SEST)

6-8 September 2021, Vaasa, Finland

DRAFT PROGRAM

Conference Program

CEST	Day 1 06/09/2021	Day 2 07/09/2021	Day 3 08/09/2021
9:30 – 10:00	Opening Session	-	-
10:00 – 11:30	Session 1	Session 6	Session 11
11:30 – 12:00	Break	Break	Break
12:00 – 13:30	Session 2	Session 7	Session 12
13:30 – 14:00	Break	Break	Break
14:00 – 14:45	<i>Keynote 1</i>	<i>Keynote 3</i>	<i>Keynote 5</i>
14:45 – 15:30	<i>Keynote 2</i>	<i>Keynote 4</i>	<i>Keynote 6</i>
15:30 – 17:00	Session 3	Session 8	Session 13
17:00 – 17:30	Break	Break	Break
17:30 – 19:00	Session 4	Session 9	Session 14
19:00 – 19:30	Break	Break	Break
19:30 – 21:00	Session 5	Session 10	Closing & Awards Session

SESSION 1 (Mon, Sep 6th 2021)

Power System Planning

Time: 10:00 – 11:30 (CEST)

Chair: Ozan Erdiñç

316	<p>Optimal Placement of Renewable Energy Sources Distributed Generation in an Unbalanced Distribution Network for Modern Grid Operations <i>Ifedayo Oladeji, Ramon Zamora and Tek Tjing Lie</i></p>
331	<p>Allocation of FCLs in Transmission Networks with High Penetration of DGs: A Two-Stage Approach <i>Mohammad Amin Jarrahi, Farzad Roozitalab, Mohammad Mehdi Arefi, Mohammad Sadegh Javadi and João P.S. Catalão</i></p>
377	<p>Optimal Utilisation of Grid Capacity for Connection of New Renewable Power Plants in Norway <i>Viljar Stensaker Stave, Marthe Fogstad Dyngre, Hossein Farahmand, Magnus Korpås and Ümit Cali</i></p>
80	<p>An open source tool for approximate analytical reliability analysis in radial distribution grids <i>Sigurd Hofsmo Jakobsen, Michele Garau and Olve Mo</i></p>
160	<p>Transmission Expansion Planning using a Highly Accurate AC Optimal Power Flow Approximation <i>Otto Heide, Karlo Šepetanc and Hrvoje Pandžić</i></p>
185	<p>Optimization-Based Distribution System Reliability Evaluation: An Enhanced MILP Model <i>Mohammad Jooshaki, Matti Lehtonen, Mahmud Fotuhi-Firuzabad, Gregorio Muñoz-Delgado, Javier Contreras and José M. Arroyo</i></p>
196	<p>A Multi-Terminal HVDC Demonstration Grid in the North Sea: A Cost-Effective Option <i>Chandra Kant Jat, Jay Dave, Hakan Ergun and Dirk Van Hertem</i></p>
349	<p>Coordination of Aggregators for Flexibility Provision: A Conceptual Framework <i>Cesar Diaz-Londono, Carlos Adrian Correa-Florez, Jose Vuelvas, Andrea Mazza, Fredy Ruiz and Gianfranco Chicco</i></p>
337	<p>Cross-border Shared Sizing of Frequency Restoration Reserves: Insights from the H2020 CROSSBOW Project <i>Panagiotis Padiaditis, Dimitrios Papadaskalopoulos, Nikos Hatziargyriou and Dušan Prešić</i></p>

SESSION 2 (Mon, Sep 6th 2021)

Electricity Markets

Time: 12:00 – 13:30 (CEST)

Chair: Nikolaos Paterakis

343	<p>High-Performance Data Analytics Techniques for Power Markets Simulation <i>Juraj Kardoš, Timothy Holt, Olaf Schenk, Vincenzo Fazio, Luca Fabietti and Filippo Spazzini</i></p>
33	<p>Reactive Power Market Demonstration <i>Pirjo Heine, Atte Pihkala, Suvi Takala and Sergio Motta</i></p>
390	<p>Hybrid AC/DC Optimal Power Flow Modelling Approach for Coordination in Flexibility Market <i>Ole Kjærland Olsen, Damian Sieraszewski, Dmytro Ivanko, Irina Oleinikova and Hossein Farahmand</i></p>
34	<p>A multiagent framework to model the interactions of local energy communities and power systems <i>Inês F.G. Reis, Ivo Gonçalves, Carlos Henggeler Antunes and Marta A.R. Lopes</i></p>
239	<p>Mathematical Model for Agent-based Local Energy Exchange Engine (D3A) <i>Amin Shokri Gazafroudi, Godwin C. Okwuibe, Sarah Hambridge, Christopher Dietrich, Ana Trbovich, Peter Tzscheuschler, Thomas Hamacher and Miadreza Shafie-khah</i></p>
243	<p>Optimal Scheduling of Commercial Demand Response by Technical Virtual Power Plants <i>Matthew Gough, Sérgio F. Santos, João M.B.A. Matos, Juan M. Home-Ortiz, Mohammad S. Javadi, Rui Castro and João P.S. Catalão</i></p>
125	<p>Optimal Participation of RES Aggregators in Electricity Markets Under Main Imbalance Pricing Mechanisms <i>Ilias G. Marneris, Andreas V. Ntomaris, Pandelis N. Biskas and Anastasios G. Bakirtzis</i></p>
383	<p>Optimal Strategy of Energy Storage Aggregators in Ancillary Service Markets: Stochastic Programming Approach <i>Meysam Khojasteh, Pedro Faria, Fernando Lezama and Zita Vale</i></p>
369	<p>Blockchain-Enabled Equity Crowdfunding for Energy Storage Investments <i>Umit Cali, Ugur Halden, Marthe Fogstad Dyngne and Aleksandra-Sasa Bukvic-Schaefer</i></p>

SESSION 3 (Mon, Sep 6th 2021)

Electric Mobility

Time: 15:30 – 17:00 (CEST)

Chair: Ozan Erdiñç

77	Efficient Online Scheduling of Electric Vehicle Charging Using a Service-Price Menu <i>Angeliki Mathioudaki, Georgios Tsaousoglou, Emmanouel Varvarigos and Dimitris Fotakis</i>
205	Avoiding Low-Voltage Grid Congestion using Smart Charging of Electric Vehicles based on Day-Ahead Probabilistic Photovoltaic Forecasts <i>Nico Brinkel, Lennard Visser, Tarek AlSkaif and Wilfried van Sark</i>
56	A Smart Charging Algorithm Considering Multiple Revenue Opportunities <i>Nico Pieper, Tom Warendorf and Johanna Myrzik</i>
63	Heavy-duty electric vehicle charging profile generation method for grid impact analysis <i>Kyrre Kirkbakk Fjær, Venkatachalam Lakshmanan, Bendik Nybakk Torsæter and Magnus Korpås</i>
92	Commutation Angle Maps Evaluation for Magnet Arrangements of Interior Permanent Magnet Synchronous Machines in Electric Vehicles <i>Pedram Asef, Mouloud Denai, Bruno Ricardo Marques, Johannes J. H. Paulides and Andrew Laphorn</i>
334	Plug-in Electric Vehicle Load Modeling for Smart Charging Strategies in Microgrids <i>Iven Guzel and Murat Göl</i>
392	Modeling and Simulation of Electric Vehicle Flexibility to Support the Local Network <i>Mohammed Hijjo and Anna-Lena Klingler</i>
249	Energy Management of a Port Serving Fuel Cell and Battery Based Hybrid Green Ferries <i>Hilal Özdemir, Hilmi Cihan Güldorum, Ozan Erdiñç and İbrahim Şengör</i>
85	Adaptive Gain Tuning of Onboard Chargers to Mitigate Parameter Uncertainty in V2G Interfaces <i>Khalil Sinjari, Saad Alzahrani and Joydeep Mitra</i>

SESSION 4 (Mon, Sep 6th 2021)
Power Electronic Systems & Applications

Time: 17:30 – 19:00 (CEST)

Chair: Hossein Hafezi

40	Integration Design of Sub-Module for Medium Voltage Modular Multilevel Converter <i>Vegard Steinsland, Eirik Haustveit, Endre Håland and Shujun Zhang</i>
101	New High Step-Up Coupled Dual Winding Quadratic Enhanced SEPIC DC-DC Converter <i>Soroush Esmaeili, Sara Hasanpour and Hossein Hafezi</i>
214	Advanced Control of DC Grid-Connected Proton Exchange Membrane Fuel Cell: A Linear Parameter Varying Approach <i>Amir Afsharinejad, Maryam Dehghani, Mohammad H. Asemani, Navid Vafamand, Mohammad S. Javadi, Fei Wang and João P.S. Catalão</i>
256	Circuit Configuration of a Sensorless Multilevel Inverter with Voltage Multiplying Ability <i>Erfan Azimi, Aryorad Khodaparast and Hossein Hafezi</i>
286	Control Algorithm Extension for Series Power Electronic Converter <i>Kishore Akkala, Roberto Faranda, Pierfrancesco Sodini and Giambattista Gruosso</i>
303	A Single-Switch Ultra-High Gain DC-DC Converter with Low Input Current Ripple and ZCS <i>Mohammad Farsijani, Sohrab Abbasian, Hossein Hafezi, Mohammad Tavakolibina and Karim Abbaszadeh</i>
414	A Novel Multilevel Solid-State Transformer for Hybrid Power Grids <i>Vitor Monteiro, Delfim Pedrosa, Sergio Coelho, Tiago Sousa, Luis Machado and Joao L. Afonso</i>
415	Model Predictive Control of a Single-Phase Five-Level VIENNA Rectifier <i>Vitor Monteiro, Catia Oliveira, Tiago Sousa and Joao L. Afonso</i>
128	A Novel Single-Phase Triple-Output Active Buck Rectifier Using Nine-Level Packed E-Cell Converter <i>Mohammad Babaie and Kamal Al-Haddad</i>

SESSION 5 (Mon, Sep 6th 2021)

Distributed Energy Resources

Time: 19:30 – 21:00 (CEST)

Chair: Mohammad Javadi

86	<p>Energy Storage Sizing Based on Automatic Frequency Restoration Reserve Market Participation of Hybrid Renewable Power Plants <i>Jon Martinez-Rico, Ismael Ruiz de Argandoña, Ekaitz Zulueta, Unai Fernandez-Gamiz and Mikel Armendia</i></p>
97	<p>PV Hosting Capacity Improvement Through an Aggregate Study of Single-tuned Passive Filter Planning and Grid Reconfiguration <i>Ehsan Kazemi-Robati, Hossein Hafezi and Mohammad Sadegh Sepasian</i></p>
339	<p>Energy Management in Converter-Interfaced Renewable Energy Sources Through Ultracapacitors for Provision of Ancillary Services <i>Andrei Mihai Gross, Kyriaki-Nefeli Malamaki, Manuel Barragán-Villarejo, Georgios C. Kryonidis, Francisco Jesús Matas-Díaz, Spyros I. Gkavanoudis, Juan Manuel Mauricio, José María Maza-Ortega and Charis S. Demoulias</i></p>
26	<p>Ramp-Rate Control of DRES employing Supercapacitors in Distribution Systems <i>Kyriaki-Nefeli D. Malamaki, Francisco Casado-Machado, Manuel Barragán-Villarejo, Andrei Mihai Gross, Georgios C. Kryonidis, Jose L. Martinez-Ramos and Charis S. Demoulias</i></p>
88	<p>Comparing Disturbance-based Methods for Inertia Estimation in the island of São Vicente, Cape Verde <i>Dominique Alonso Sørensen and Esther Torres Iglesias</i></p>
238	<p>FESS for Reliability Improvement of DER-based Microgrids: Comparison of Distributed Storage Alternatives <i>Abir Muhtadi, Dilip Pandit, Nga Nguyen, Salem Elsaiah and Joydeep Mitra</i></p>
225	<p>Reliability Evaluation of Solar PV System Incorporating Insolation-Dependent Failure Rates <i>Dilip Pandit, Nga Nguyen, Salem Elsaiah and Joydeep Mitra</i></p>
217	<p>Sizing Storage for Mitigating Frequency Stability Issues of Wind Integrated Systems <i>Atri Bera and Joydeep Mitra</i></p>
353	<p>A Comprehensive Building Load Optimization Method from Utility Rate Structure Perspective with Renewables and Energy Storage <i>A S M Jahid Hasan, Luis Fernando Enriquez-Contreras, Jubair Yusuf and Sadrul Ula</i></p>

SESSION 6 (Tue, Sep 7th 2021)

Multi-energy Systems

Time: 10:00 – 11:30 (CEST)

Chair: Mohammad Javadi

111	A Coordinated Operation Model for Multiple Community Integrated Energy Systems and Hybrid Distribution System Based on Hierarchical Decentralized Scheduling <i>Chenlu Mu, Tao Ding, Ziyu Zeng, Yuge Sun, Lanfen Cheng and Xiangrui Su</i>
132	Bi-level Two-stage Stochastic Operation of Hydrogen-based Microgrids in a Distribution System <i>Mohammad H. Shams, Mohammad MansourLakouraj, Jay J. Liu, Mohammad Sadegh Javadi and João P.S. Catalão</i>
209	Optimal Cooperative Scheduling of Multi-Energy Microgrids Under Uncertainty <i>Matija Kostelac, Lin Herenčić and Tomislav Capuder</i>
20	A Cost-Driven Smart Heat Recovery Control for Supermarket Refrigeration System Coupled with District Heating System <i>Chunjun Huang, Yi Zong, Shi You, Jan Eric Thorsen and Lars Finn Sloth Larsen</i>
115	Optimal Dimensioning of Power-to-Gas Units in the Context of Integrated Power and Gas Grid Planning in Distribution Grids <i>Joshua Jakob, Tobias Riedlinger, Robert Schmidt, James Garzon-Real, Markus Zdrallek, Johannes Ruf, Wolfgang Köppel and Silas Reigardt</i>
138	Energy Hub Design in the Presence of P2G System Considering the Variable Efficiencies of Gas-Fired Converters <i>Seyed Amir Mansouri, Amir Ahmarinejad, Emad Nematbakhsh, Mohammad Sadegh Javadi, Ahmad Rezaee Jordehi and João P.S. Catalão</i>
215	Multi-Energy Planning of Urban District Retrofitting <i>Alessandro Sebastiano Carrus, Marco Galici, Emilio Ghiani, Luigi Mundula and Fabrizio Pilo</i>
194	Smart Island Energy Systems: Case Study of Ballen Marina on Samsø <i>Dawid Jozwiak, Jayakrishnan Radhakrishna Pillai, Pavani Ponnaganti, Birgitte Bak-Jensen and Jan Jantzen</i>

SESSION 7 (Tue, Sep 7th 2021)

Forecasting

Time: 12:00 – 13:30 (CEST)

Chair: Akın Taşcıkaraoğlu

148	<p>A New Ensemble Reinforcement Learning Strategy for Solar Irradiance Forecasting using the Deep Optimized Convolutional Neural Network Models <i>Seyed Mohammad J. Jalali, Mahdi Khodayar, Sajad Ahmadian, Miadreza Shafie-Khah, Abbas Khosravi, Syed Mohammed S. Islam, Saeid Nahavandi and João P. S. Catalão</i></p>
187	<p>Monthly Net Electricity Consumption Prediction under High Penetration of Distributed Photovoltaic System <i>Xin Chen, Zhenghui Li, Fei Wang, Kangping Li and João P.S. Catalão</i></p>
220	<p>Adaptive in-situ forecasting for demand-side management in low voltage power grids <i>Christian Backe, Miguel Bande, Stefan Werner and Christian Wiezorek</i></p>
5	<p>Multi-Horizon Data-Driven Wind Power Forecast: From Nowcast to 2 Days-Ahead <i>Daniel Vázquez Pombo, Tuhfe Göçmen, Kaushik Das and Poul Sørensen</i></p>
17	<p>Scenario Based Probabilistic Energy Demand Forecasting using Autoencoders and Gaussian Mixture Models <i>Theodoros Konstantinou, Nikolaos Savvopoulos and Nikos Hatziargyriou</i></p>
31	<p>Comparison of intraday probabilistic forecasting of solar power using time series models <i>Oliver Doelle, Ileskhan Kalysh, Arvid Amthor and Christoph Ament</i></p>
47	<p>Generating scenarios from probabilistic short-term load forecasts via non-linear Bayesian regression <i>Markus Löschenbrand, Sébastien Gros and Venkatachalam Lakshmanan</i></p>
311	<p>Deep Convolutional Graph Rough Variational Auto-Encoder for Short-Term Photovoltaic Power Forecasting <i>Mohsen Saffari, Mahdi Khodayar, Seyed Mohammad Jafar Jalali, Miadreza Shafie-Khah and João P.S. Catalão</i></p>
327	<p>Time-Series Analysis and Forecasting of Power Consumption using Gaussian Process Regression <i>Marcel Zimmer, Thiemo Pesch and Andrea Benigni</i></p>

SESSION 8 (Tue, Sep 7th 2021)

Power System Operation I

Time: 15:30 – 17:00 (CEST)

Chair: Gerardo Osório

35	<p>Contribution of Residential PV and BESS to the Operational Flexibility at the TSO-DSO Interface <i>Nikolaos Savvopoulos, C. Yaman Evrenosoglu, Theodoros Konstantinou, Turhan Demiray and Nikos Hatziargyriou</i></p>
259	<p>Uncertainty-Aware Decision Making in Power Systems Including Energy Storage, Dynamic Line Rating and Responsive Demand as Multiple Flexibility Resources <i>F. Gülşen Erdiñç, Alper Çiçek, Ozan Erdiñç and Recep Yumurtacı</i></p>
266	<p>A New Second-Order Linear Approximation to AC OPF Managing Flexibility Provision in Smart Grids <i>Muhammad Usman and Florin Capitanescu</i></p>
304	<p>Flexible and curtailable resource activation in a distribution network using nodal sensitivities <i>Md Umar Hashmi, Arpan Koirala, Hakan Ergun and Dirk Van Hertem</i></p>
400	<p>QuickFlex: a Fast Algorithm for Flexible Region Construction for the TSO-DSO Coordination <i>Luis Lopez, Alvaro Gonzalez-Castellanos, David Pozo, Mardavij Roozbehani and Munther Dahleh</i></p>
22	<p>Two-stage Approach for the Provision of Time-Dependent Flexibility at TSO-DSO Interface <i>Georgios C. Kryonidis, Apostolos N. Lois, Kyriaki-Nefeli D. Malamaki and Charis S. Demoulias</i></p>
32	<p>Toward Stochastic Multi-period AC Security Constrained Optimal Power Flow to Procure Flexibility for Managing Congestion and Voltages <i>Mohammad Iman Alizadeh, Muhammad Usman and Florin Capitanescu</i></p>
312	<p>Fair Congestion Management in Distribution Systems using Virtual Power Lines <i>Ruben D. Hernandez, Juan S. Giraldo, Georgios Tsaousoglou, Marcos J. Rider and Nikolaos G. Paterakis</i></p>
219	<p>Transactive Energy Management Framework for Active Distribution Systems <i>Ali Rajaei, Sajjad Fattaheian-Dehkordi, Mahmud Fotuhi-Firuzabad and Matti Lehtonen</i></p>

SESSION 9 (Tue, Sep 7th 2021)

Modeling, Simulation & ICT

Time: 17:30 – 19:00 (CEST)

Chair: Tarek AISKaif

145	<p>On the application of circuit theory and nonlinear dynamics to the design of highly efficient energy harvesting systems <i>Michele Bonnin, Fabio L. Traversa and Fabrizio Bonani</i></p>
1	<p>Modeling Lithium-Ion Batteries Using Machine Learning Algorithms for Mild-Hybrid Vehicle Applications <i>Daniel Jerouschek, Ömer Tan, Ralph Kennel and Ahmet Taskiran</i></p>
48	<p>Speed-up Of Large-Scale Voltage Stability Simulations within a Fully Separated Modeler/Solver Framework <i>A. Guironnet, F. Rosière, G. Bureau and M. Saugier</i></p>
57	<p>Model Identification and Parameter Tuning of Dynamic Loads in Power Distribution Grid: Digital Twin Approach <i>Nils Huxoll, Mohannad Aldebs, Payam Teimourzadeh Baboli, Sebastian Lehnhoff and Davood Babazadeh</i></p>
297	<p>Ontology Modeling for Decentralized Household Energy Systems <i>Jiantao Wu, Fabrizio Orlandi, Tarek AISKaif, Declan O'Sullivan and Soumyabrata Dev</i></p>
13	<p>Towards a Scalable and Flexible Smart Grid Co-Simulation Environment to Investigate Communication Infrastructures for Resilient Distribution Grid Operation <i>Dennis van der Velde, Ömer Sen and Immanuel Hacker</i></p>
75	<p>EMS²aaS: A Dockerized framework for remote EMS deployment <i>Giancarlo Marafioti, Synne Fossøy, Johannes Philippus Maree and Iver Bakken Sperstad</i></p>
178	<p>Fault detection in DC Microgrids using Recurrent Neural Networks <i>Ivan Grcić and Hrvoje Pandžić</i></p>
166	<p>Deep Generative Graph Learning for Power Grid Synthesis <i>Mahdi Khodayar and Jianhui Wang</i></p>

SESSION 10 (Tue, Sep 7th 2021)

Power System Operation II

Time: 19:30 – 21:00 (CEST)

Chair: Gerardo Osório

36	<p>Adaptation of DER Control Schemes and Functions During MV Network Back-up Connection <i>Hannu Laaksonen, Chethan Parthasarathy, Hosna Khajeh and Miadreza Shafie-Khah</i></p>
81	<p>A Fast Non-Decoupled Algorithm to Solve the Load Flow Problem in Meshed Distribution Networks <i>Hugo Edgardo Hernández Fuentes, Francisco Javier Zarco Soto and José L. Martínez-Ramos</i></p>
277	<p>Evaluation of wind power plants' control capabilities to provide primary frequency support during system restoration <i>Holger Becker, Manuel Fernando Valois-Rodriguez, Lukas Holicki, Kaveh Malekian and Pascal Gartmann</i></p>
143	<p>Optimal partitioning in distributed state estimation considering a modified convergence criterion <i>Sajjad Asefi, Elena Gryazina and Helder Leite</i></p>
300	<p>On the influence of electro-thermal modeling of overhead lines on curative congestion management in transmission systems <i>Jonas Mehlem, Katharina Kollenda, Sven Wieland, Amir Ali Panahi, Ralf Puffer and Albert Moser</i></p>
379	<p>Steady-State and Dynamic Security Assessment for System Operation <i>Alexander Raab, Gert Mehlmann, Matthias Luther, Tom Sennewald, Steffen Schlegel and Dirk Westermann</i></p>
236	<p>A Cooperative Game Theory-based Approach to Compute Participation Factors of Distributed Slack Buses <i>Mukesh Gautam, Narayan Bhusal, Jitendra Thapa and Mohammed Benidris</i></p>
37	<p>Increasing the RES Hosting Capacity in Distribution Systems Through Reconfiguration with Closed-Loop Operation and Voltage Control <i>Juan M. Home-Ortiz, Leonardo H. Macedo, Renzo Vargas, Rubén Romero, José Roberto Sanches Mantovani and João P.S. Catalão</i></p>
112	<p>A Proactive Resilience Enhancement Strategy to Electric Distribution System during Hurricanes <i>Michael Abdelmalak and Mohammed Benidris</i></p>

SESSION 11 (Wed, Sep 8th 2021)

Demand Side Management

Time: 10:00 – 11:30 (CEST)

Chair: Akın Taşcıkaraoğlu

289	<p>Impact of Demand Response Price Signal on Battery State of Charge Management at Office Buildings <i>Sota Kinoshita, Nobuyuki Yamaguchi, Fuyuki Sato and Shinichiro Ohtani</i></p>
250	<p>Hierarchical Coordination of a Vehicle-to-Grid System to Improve Self-consumption in Building MicroGrids <i>Daniela Yassuda Yamashita, Ionel Vechiu and Jean-Paul Gaubert</i></p>
416	<p>Enabling Vehicle-to-Grid and Grid-to-Vehicle Transactions via a Robust Home Energy Management System by Considering Battery Aging <i>Ali Soleimani, Vahid Vahidinasab and Jamshid Aghaei</i></p>
3	<p>A Multi-objective Optimization Model for the Quantification of Flexibility in a Large Business Park <i>Nanda Kishor Panda and Nikolaos G. Paterakis</i></p>
50	<p>Energy Management using Industrial Flexibility with Multi-objective Distributed Optimization <i>Debopama Sen Sarma, Tom Warendorf, Johanna Myrzik and Christian Rehtanz</i></p>
94	<p>Optimal Investment Decisions for a Zero Emission Building under Uncertainty: Stochastic BUTLER <i>Ingrid Marie Andersen and Karen Byskov Lindberg</i></p>
361	<p>A comparison of indoor temperature models for building demand response optimisation using MILP <i>Pedro L. Magalhães and Carlos Henggeler Antunes</i></p>
68	<p>Energy Profile Clustering with Balancing Mechanism towards more Reliable Distributed Virtual Nodes for Demand Response <i>Ioannis Koskinas, Apostolos C. Tsolakis, Venizelos Venizelou, Dimosthenis Ioannidis, George E. Georghiou and Dimitrios Tzovaras</i></p>

SESSION 12 (Wed, Sep 8th 2021)

Microgrids

Time: 12:00 – 13:30 (CEST)

Chair: Nikolaos Paterakis

288	A Renewable based Nano-grid for Smart Rural Residential Application <i>Abhishek Kumar, Yan Deng, Xiangning He, Praveen Kumar, R.C. Bansal and R. M. Naidoo</i>
357	Probabilistic-based Optimal Storage Placement and Sizing Enabling Networked Microgrid Community <i>Parikshit Pareek, Jiahang Xie, Yu Weng, Anshuman Singh and Hung Dinh Nguyen</i>
371	A multi-objective Energy Management System for microgrids: minimization of costs, exergy in input, and emissions <i>Federico Delfino, Giulio Ferro, Luca Parodi, Michela Robba, Mansueto Rossi, Martina Caliano, Marialaura Di Somma and Giorgio Graditi</i>
150	Microgrid Dispatch with Protection Constraints <i>Mateo Beus, Ivan Grcić and Hrvoje Pandžić</i>
61	Coupling Analysis for the Design of Industrial DC Microgrids <i>Darian Andreas Schaab, Jonas Knapp and Alexander Sauer</i>
119	An Improved Energy Management Strategy for a DC Microgrid including Electric Vehicle Fast Charging Stations <i>Siham Naser Hendi Alalwan, Amjad Muneim Mohammed, Akın Taşçıkaraoğlu and João P.S. Catalão</i>
229	Optimal Energy Resource Allocation in Isolated Micro Grid with Limited Supply Capacity <i>Ugonna Anuegunwa and Geev Mokryani</i>
424	A Coordinated Decentralized Loss Minimization Scheme for Hybrid AC/DC Distribution System with Multiple Microgrids <i>Moossa Khodadadi Arpanahi, Abolfazl Nateghi and Miadreza Shafie-Khah</i>
84	An Integrated Control and Protection Scheme for Microgrids <i>Saad Alzahrani, Khalil Sinjari and Joydeep Mitra</i>

SESSION 13 (Wed, Sep 8th 2021)
Power System Dynamics, Control & Power Quality

Time: 15:30 – 17:00 (CEST)

Chair: Hossein Hafezi

258	Detection of Misconfigurations in Power Distribution Grids using Deep Learning <i>David Fellner, Thomas I. Strasser and Wolfgang Kastner</i>
21	Distributed Methodology for Reactive Power Support of Transmission System <i>Georgios C. Kryanidis, Maria E. Tsampouri, Kyriaki-Nefeli D. Malamaki and Charis S. Demoulias</i>
204	Impact of uncertainty sources on the voltage control of active distribution grids <i>Marco Pau, Edoardo De Din, Ferdinanda Ponci, Paolo Attilio Pegoraro, Sara Sulis and Carlo Muscas</i>
103	Influence of autoregressive noise on the phasor data based disturbance classification <i>André Kummerow, Mohammad Dirbas, Cristian Monsalve, Steffen Nicolai and Peter Bretschneider</i>
98	Hosting Capacity Enhancement and Voltage Profile Improvement Using Series Power Electronic Compensator in LV Distribution Networks <i>Ehsan Kazemi-Robati, Hossein Hafezi, Roberto Faranda, Mohammad Sadegh Sepasian and Pierfrancesco Sodini</i>
284	Reducing the cost of maintaining the frequency stability using dc grid protection <i>Jay Dave, Hakan Ergun and Dirk Van Hertem</i>
301	Evaluation of the impact of Heat-Wave on Distribution System Resilience <i>Andrea Mazza, Yang Zhang, Chiara Carozzo, Ettore Bompard, Gianfranco Chicco, Emiliano Roggero and Giuliana Galofaro</i>
64	Harmonic Measurements in a Capacitive Voltage Transformer: Improvement Considering the Transformer's Design Parameters <i>Manuel De La Hoz, Juan Chacón, Dominique Alonso Sørensen, Urko Zatika Larrinaga and Cristina Rioja Barón</i>
348	Ancillary services from a residential community - a Norwegian case study <i>Rubi Rana, Kjersti Berg, Maren R. Brubæk and Olav B. Fosso</i>

SESSION 14 (Wed, Sep 8th 2021)

Data Analytics

Time: 17:30 – 19:00 (CEST)

Chair: Tarek AlSkaif

78	Enhanced time series aggregation for long-term investment planning models of energy supply infrastructure in production plants <i>Lukas Hoettecke, Sebastian Thiem and Stefan Niessen</i>
133	Detection of Anomalies in Household Appliances from Disaggregated Load Consumption <i>Marco Castangia, Riccardo Sappa, Awet Abraha Girmay, Christian Camarda, Enrico Macii and Edoardo Patti</i>
272	Towards an Approach to Contextual Detection of Multi-Stage Cyber Attacks in Smart Grids <i>Ömer Sen, Dennis van der Velde, Katharina A. Wehrmeister, Immanuel Hacker, Martin Henze and Michael Andres</i>
403	Impact of Load Demand Dataset Characteristics on Clustering Validation Indices <i>Mayank Jain, Mukta Jain, Tarek AlSkaif and Soumyabrata Dev</i>
199	A Quantitative Analysis of the Short-Term and Structural Impact of COVID-19 Measures on Electric Vehicle Charging Patterns <i>Nico Brinkel, Wouter Schram, Tarek AlSkaif and Wilfried van Sark</i>
216	Evaluating a Fault Location Algorithm for Active Distribution Systems Utilizing Two-Point Synchronized or Unsynchronized Measurements <i>Christos A. Apostolopoulos, Charalampos G. Arsoniadis, Pavlos S. Georgilakis and Vassilis C. Nikolaidis</i>
224	The value of multiple data sources in machine learning models for power system event prediction <i>Volker Hoffmann, Jonatan Ralf Axel Klemets, Bendik Nybakk Torsæter, Gjert H. Rosenlund and Christian A. Andresen</i>
308	Comprehensive method for modeling uncertainties of solar irradiance for PV power generation in smart grids <i>Amedeo Buonanno, Martina Caliano, Marialaura Di Somma, Giorgio Graditi and Maria Valenti</i>
39	Exponential Modeling of Equipment Degradation in the Grid for More Reliable Contingency Analysis <i>Austin Lassetter and Eduardo Cotilla-Sanchez</i>

List of Keynote Addresses

Day 1:

Carlo Alberto Nucci (14:00 - 14:45 CEST)

Frede Blaabjerg (14:45 - 15:30 CEST)

Day 2:

Joydeep Mitra (14:00 - 14:45 CEST)

Badrul Chowdhury (14:45 - 15:30 CEST)

Day 3:

Claudio Canizares (14:00 - 14:45 CEST)

Bikash Pal (14:45 - 15:30 CEST)